**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6.2 notes**

**Single Blind-**

**Double Blind-**

**Nonadherers-**

**Dropouts-**

**BLOCK DESIGN**

**Block =**

It’s used to…

**Block design =**

**Example 1:**

Let’s go back to the experiment on people with high cholesterol. We wanted to test the effect of new and old drug. We also thought a control group would be useful. There are 100 volunteers with high cholesterol that are currently not on meds that are available.

What are some lurking variables in this experiment?

Using this variable, create a block design experiment

Could this experiment be done double-blind? **Example 2:** An experiment to determine the effect of a fertilizer on the growth of grass is to be conducted in a controlled environment. Identical soil and seeds are placed in plots in the lab. Once the grass starts growing, some plots are to be treated with the new fertilizer, while the rest receive no fertilizer. All other conditions regarding water, temperature, etc. are identical, except for the proximity of the plots to the single light source in the room. The figure below illustrates this.

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What is the lurking variable in this experiment?

Using this knowledge, create a block design experiment below

**Example 3:** Let’s go back to the dog example from before. We wanted to see if the drugs glucosamine and chondroitin had an effect on joint and hip health in dogs. We added a control group to the experiment too. We had 300 dogs (various breeds) from numerous clinics.

What are some lurking variables in this study?

Using one or two of these, create a block design:

**Example 4:** Men and women respond differently to advertising. An experiment to compare the effectiveness of 3 TV commercials for the same product will want to look separately at the reactions of the different genders, and assess their overall responses to the ads. There are 70 people available for the experiment. **Design a block design experiment.**

**Matched Pairs Design-**

* Only…
* Every individual …
* Where is the randomization if everyone gets both treatments???
* Design:

**Example: Taste Test**

We want to do a Coke/Pepsi Taste test. Design this matched pairs experiment.

**Example 2:** A manufacturer of boots plans to conduct an experiment to compare a new method of waterproofing to the current method. The appearance of the boots is not changed by either waterproofing method. The company recruits 100 volunteers in Seattle (where it rains a lot) to wear the boots as they normally would for 6 months. At the end of the 6 months, the boots will be returned to the company to be evaluated for water damage.

1. What is the explanatory variable?
2. What are the 2 treatments?
3. What is the response variable?
4. Who are the individuals/subjects?
5. How could each individual have BOTH treatments applied to them?
6. Design a matched pairs experiment:
7. Could your experiment be double blind? Explain why or why not

**Example 3:** Scientists are in search of a mosquito repellant that is more effective. To test the effectiveness of the new compound versus the current compound, scientists have randomly selected 100 people to participate in their experiment. 100 bins, each with an equal number of mosquitoes in them, are available for the experiment. After a repellant is applied to a subject’s arm, they will insert their forearm into a bin for 1 minute. The number of mosquito bites on the arm after 1 min will be counted.

1. What is the explanatory variable?
2. What are the treatments?
3. What is the response variable?
4. Who are the subjects/individuals?
5. Suppose this study is to be conducted using a completely randomized design. Design this experiment below:
6. Suppose this study is to be conducted using a matched pairs design. How could each individual have BOTH treatments applied to them?
7. Design this experiment below: